

ON THE SYNONYMY OF SOME THYSANOPTERA
OCCURRING IN CALIFORNIA*

BY J. DOUGLAS HOOD

University of Rochester

In this paper I have consolidated fourteen supposed species into three. Two species described by one worker have been united with three described by another. This suggests the existence of a large number of synonymous names in other parts of the order, a suspicion which we find supported by the facts; and in other papers, to be published from time to time, some of this synonymy will be pointed out.

Aside from the more careful study of material, which is obviously necessary on the part of certain students, two means for the improvement of descriptive work on the group present themselves: First, the devotion of more time and thought to the technique of slide making, so that *every* specimen can be studied satisfactorily; and second, the employment of larger series of paratypes, so that other specialists may be provided with actual specimens, rather than with descriptions which can never be adequate for the simple reason that new characters and new differences, not mentioned in the original diagnoses, are continually being discovered.

ANAPHOTHRIPS SECTICORNIS (Trybom)

- 1896, *Thrips secticornis* Trybom, Öfvers. K. Vetensk. Akad. Förh., No. 8, p. 620. [Portland and Albany, Oregon; Ribachi, Pen., Russia (Lapland).]
- 1899, *Anaphothrips secticornis*, Reuter, Acta Soc. Fauna Flora Fenn., Vol. XVII, No. 2, pp. 43, 44.
- 1904, *Sericothrips apteris* Daniel Ent. News, Vol. XV, p. 295. [Berkeley, Cal.]
- 1908, *Apterothrips subreticulata* Bagnall, Trans. Nat. Hist. Soc. Northumb., etc., N. S., Vol. III, Pt. I, p. 185, Pl. VI, figs. 1-3. [Queen Charlotte Islands, B. C., Canada.]
- 1926, *Anaphothrips apteris*, Moulton, Pan-Pac. Ent., Vol. III, p. 23.

Doctor Trybom described this species in 1896 from specimens taken by himself in Oregon and in Russia, and three years later Reuter referred it to *Anaphothrips*. Since then its affinities have been largely misunderstood. Miss Daniel considered

*Contribution from the Entomological Laboratories of Cornell University.

it a *Sericothrips* (which has a densely pubescent abdomen) and Bagnall erected for it a distinct genus (which he compared with "*Euthrips*" and *Pachythrips*). Moulton referred *Sericothrips apteris* Daniel to *Anaphothrips* quite properly, but failed to note its identity with *Anaphothrips secticornis*.

The material that I have had for study is thoroughly authentic, and is listed below:

California: "San Francisco, 1902?, S. M. Daniel," 2 ♀'s (paratypes of *Sericothrips apteris* Daniel), ex coll. Daniel.

Berkeley, March 1, 1906, grass, Dudley Moulton; 1 ♀, ex coll. Moulton and U. S. Bur. Ent.*

"Santa Cruz, lettuce," D. L. Crawford; 2 ♀'s, ex. coll. Crawford.

Colorado: Grant, July 21, 1916, sweeping, L. O. Jackson; 2 ♀'s [Hood No. 345].

Canada: Queen Charlotte Islands, B. C., September 4, 1891, on nettle; 1 ♀ ("cotype" of *Apterothrips subreticulata* Bagnall), ex coll. British Museum, Natural History.

Lillooet, B. C. (Mount McLean, 7000 feet), on *Lupinus arcticus*, R. C. Treherne; 3 ♀.

Austria: Warscheneck (Alps), 1600 m., July 17, 1919, swept; 5 ♀, ex coll. H. Priesner.

HAPLOTHRIPS FASCICULATUS (Crawford)

1909, *Phyllothrips fasciculata* Crawford, Pomona Coll. Journ. Ent., Vol. I, No. 4, p. 105; fig. 48, A-H. [Claremont, Cal., on *Eriogonum fasciculatum*.]

1909, *Phyllothrips fasciculata* var. *stenoceps* Idem, ibidem, p. 108 [With the typical form.]

1912, *Anthothrips nigricornis* Jones (nec. Bagnall, 1910), Tech. Ser. 23, Pt. I, Bur. Ent., U. S. Dept. Agr., p. 17, Pl. V, figs. 1-4. [San Jose, Cal., on *Eriogonum nudum*.]

1912, *Haplothrips jonesii* Karny, Zool. Ann., Vol. IV, p. 344.

1913, *Leptothrips russelli* Morgan, Proc. U. S. Nat. Mus., Vol. 46, p. 39, figs. 72-75. [Laurel Cañon, Cal.]

Crawford's *Phyllothrips fasciculatus*, described from Claremont, California, and Jones' *Anthothrips nigricornis* (later renamed *jonesii* by Karny because the name had been pre-empted), described from San Jose, California, were both taken on species of *Eriogonum*, or wild buckwheat. It is not surprising, then, that they are the same. Of *Leptothrips russelli*, from Laurel Cañon, California, Morgan says in his original description that the food plant is unknown. I have seen type

*This specimen is marked "♀ cotype" and in another place "type," but is most certainly neither, having been taken sixteen months after the species was described.

material of all three species and they are identical, although a study of the several descriptions and figures would lead one to think otherwise. The characteristic form of the third antennal segment is best seen in the illustrations of Crawford and Morgan.

The posteriorly narrowed head of the variety *stenoceps* Crawford is really more nearly normal than that of the other specimen figured by him. I have elsewhere remarked that this variety is untenable, "having been erected for the reception of specimens of the typical form which had *not* become crushed in the mounting."

This species, with those which I have described as *malifloris*, *purpuratus*, and *distalis*, suggest the derivation of the genus *Leptothrips* from *Haplothrips*-like, instead of *Liothrips*-like, ancestors. Though closely related, *Leptothrips* and *Haplothrips* need not be merged. The absence of a midlateral bristle in the former will serve to distinguish them, at least until possible intermediate forms are discovered. Most interesting is the elongation of the head in these four related *Haplothrips*; the production of the conical vertex forward until it overhangs the insertion of the antennæ; and the deeply and closely longitudinally striate metanotum, all of them characters highly suggestive of *Leptothrips*.

The following material has been studied:

California: Claremont, on wild buckwheat (*Eriogonum fasciculatum*), D. L. Crawford; 4 ♀, 1 ♂ ("cotypes" of *Phyllothrips fasciculata* Crawford).

San Jose, July-September, 1910, on flowers of *Eriogonum nudum*, P. R. Jones; 3 ♀, 2 ♂ (*holotype*, *allotype*, and *paratypes* of *Anthothrips nigricornis* Jones).

Laurel Cañon, May 14, 1911, H. M. Russell; 1 ♀ (*paratype* of *Leptothrips russelli* Morgan).

Genus KARNYOTHRIPS Watson

(*Zygothrips* and *Haplothrips* auctores, partim)

1922, *Karynia* (sic!) Watson lapsus typog. for *Karnyia*, preëmpted), Fla. Ent., Vol. VI, p. 6. [Type: *K. weigeli*, n. sp. (= *Anthothrips flavipes* Jones), by designation.]

1923, *Karnyothrips* Watson, Bull. 168, Fla. Agr. Exp. Sta., p. 70. [New name for *Karynia* Watson].

Karnyia was misspelled, preoccupied, and assigned to the wrong subfamily, and its type species is a synonym; but, by

purely fortuitous circumstances, it appears to find a place in our classification when these technical difficulties have been overcome by changing the name to *Karnyothrips*. The genus may be known in both sexes by the enlarged tooth, claw-like and somewhat forwardly directed, which arises from the inner distal angle of the first tarsal segment (Fig. 1, b); by the close union of the last two antennal segments (this union being closer even than in *Zygothrips*); and by the long hairs at the tip of the tube, which are frequently twice the length of that body segment. Its affinities are, of course, with *Zygothrips*, *Haplothrips*, and *Hindsiana*, rather than with *Cryptothrips*.

To *Karnyothrips* should be assigned the following species, and perhaps others which I have not seen:

- K. melaleuca* (Bagnall), described in *Hindsiana*;
- K. dodgei* (Hood), described in *Hindsiana*;
- K. rhopalocerus* (Hood), described in *Hindsiana*; and
- K. flavipes* (Jones), described in *Anthothrips*.

KARNYOTHRIPS FLAVIPES (Jones)

(Fig. 1, b)

- , *Phlæothrips lucasseni* Krüger (?). (See van Deventer, Handboek Suik.-Cult. Rietsuik.-Fabr. Java, Deel II, p. 282, Pl. 38, fig. 4; 1906). [Java.]
- 1912, *Anthothrips flavipes* Jones, Tech. Ser. 23, Pt. I, Bur. Ent., U. S. Dept. Agr., p. 18, Pl. V, figs. 5-7. [San Jose, Cal.]
- 1912, *Cryptothrips salicis* Jones, *ibid.*, p. 20, Pl. VI, figs. 1-3. [San Jose, Cal.]
- 1913, *Haplothrips ceylonicus* Schmutz, Sitzungsber. k. Akad. Wiss. Wien, Mathem.-naturw. Kl., Bd. CXXII, Abt. I, pp. 1033, 1038. [Ceylon.]
- 1915, *Zygothrips pullus* Hood and Williams, Journ. N. Y. Ent. Soc., Vol. XXIII, p. 127, Pl. VIII, fig. 1. [New Orleans, La.]
- 1921, "A Blood-Sucking Thrips," Williams, The Ent., Vol. LIV, p. 163.
- 1922, *Karynia* (sic!) *weigeli* Watson, Fla. Ent., Vol. VI, p. 7. [New Orleans, La.]
- 1923, *Haplothrips harnedi* Watson, Fla. Ent., Vol. VI, p. 45. [Southern Mississippi.]
- 1923, *Haplothrips oneco* Watson,* Bull. 168, Fla. Agr. Exp. Sta., pp. 58, 60. [Oneco, Fla.]
- 1927, *Karnyothrips flavipes*, Hood, The Ent., Vol. —, p. —.

*This species appears never to have been formally described. Mr. Watson l. c. uses the specific name in his key to *Haplothrips*, and the descriptive matter there given is sufficient to validate it. It is not described in any of his papers listed in his bibliography on pages 87 and 88.

Under *Karnyothrips flavipes* I have assembled a number of species described in various genera from widely separated parts of the world. Such a formidable citation of synonyms may appear to require explanation; but nothing more need be said, I think, than that I have seen type material of four of the species and well-authenticated specimens of three others. *Phlæothrips lucasseni* Krüger is thus the only one known to me merely by its description, and I have questioned its identity with *flavipes*. Van Deventer figures and describes a much paler antennal coloration for *lucasseni* and shows a long, slender tube in his figure; but in spite of this I cannot help believing them the same. The inversion of the ocellar triangle in his illustration is merely an error in drawing.

This is the species for which Williams has described a blood-sucking habit, based upon observations made in Trinidad, British West Indies, by himself and Mr. F. W. Urich (see Williams, l. c., and Hood, l. c.).

The material studied is listed below:

California: San Jose, February 9, 1910, from emergence cage for Pear Thrips, P. R. Jones; 1 ♀ (*holotype* of *Anthothrips flavipes* Jones).

San Jose, September 15, 1909, reared from willow galls, P. R. Jones; 1 ♀ (*holotype* of *Cryptothrips salicis* Jones).

Mississippi: "Southern Mississippi," November, 1914, on citrus, R. W. Harned; 2 ♀ (*paratypes* of *Haplothrips harnedi* Watson).

Louisiana: New Orleans, December 1, 1914, on bamboo, C. B. Williams; 11 ♀ (*holotype* and *paratypes* of *Zygothrips pullus* Hood and Williams).

New Orleans, September, 1922, predaceous on *Pseudaonidia duplex*, H. L. Dozier; 2 ♀ (det. by Watson as *Karnyia weigeli* Watson).

Florida: Gainesville, February, 1924, on long-leaf pine, T. H. Hubbell; 1 ♀ (det. by Watson as *Haplothrips oneco* Watson).

West Indies: Barbados, March 23, 1915, swept from grass by sea-shore, C. B. Williams; 3 ♀ [C. B. W., No. 596].

Trinidad (St. Joseph), March 29, 1915, on camphor and bamboo, C. B. Williams; 4 ♀ [C. B. W., Nos. 619 and 616, respectively].

Trinidad (Port-of-Spain), May 12, 1918, sucking blood from wrist; 1 ♀ [C. B. W., No. 1059].

St. Vincent, December 11 and 12, 1917, from bamboo, etc., C. B. Williams; 2 ♀ [C. B. W., Nos. 1021 and 1025].

Sumatra: "Klaten bei Djokja," October 5, 1923, leaves and flowers of tobacco, L. Fulmek; 1 ♀ (det. by Karny as *Haplothrips ceylonicus* Schmutz).

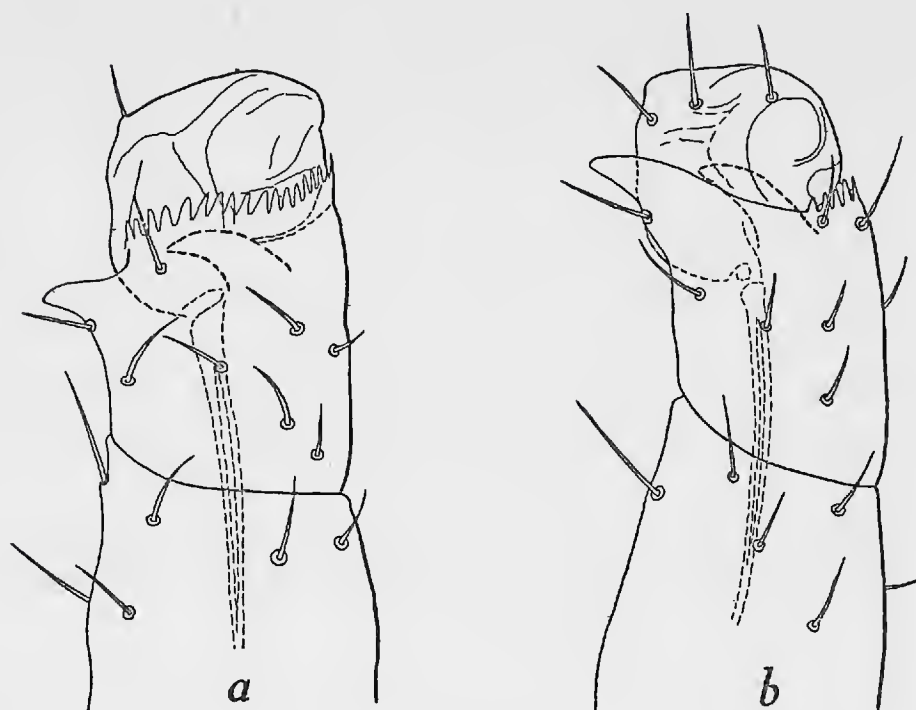


FIGURE 1

a. Right fore tarsus of *Haplothrips*, showing the tooth arising from the *inner surface* of the first tarsal segment.

b. Right fore tarsus of *Karnyothrips*, showing the claw-like, somewhat forwardly directed tooth arising from the *inner distal angle* of the first tarsal segment.

NOTES ON ORTHOPTERA AND DERMAPTERA FROM UTAH

BY VASCO M. TANNER

Brigham Young University, Provo, Utah

It has always been my hobby while collecting Coleoptera throughout the state of Utah to take as large a series of Orthoptera as possible. As a result I now have a collection of over 800 specimens, some rare species and some that extend the known range of the species. The Great Basin is practically unknown entomologically, only a few serious attempts having been made to study the insects of this region. Dr. W. W. Henderson in his valuable paper (*Oedipodinæ Found in Utah; Ut. Agri. Exp. Sta. Bull. 191, 1924*), points out that no Blattidæ, Mantidæ, Phasmidæ, and Dermaptera have been recorded for Utah. I find, however, that three species from two of the above families have been reported for Utah. Mr. Morgan Hebard (Blattidæ of N. Am. N. of Mex. Boundy., Acad. of Nat.